Review Article

Machines and Technocultural Complexity: The Challenge of the Deleuze-Guattari Conjunction

Nick Land

War in the Age of Intelligent Machines
by Manuel De Landa
New York: Swerve Editions, MIT, 1991.

A User's Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari.
by Brian Massumi
Cambridge, MA and London: Swerve Editions, MIT, 1992.

The two volumes comprising Gilles Deleuze and Fĕlix Guattari's *Capitalism and Schizophrenia – Anti-Oedipus* and *A Thousand Plateaus* – are anticipatively tuned to a socio-machinic convergence upon cyborgian dehumanization, molecular engineering systems, digital-format genomics, self-organizing telecommercial networks and artificial space. History is interfaced with the 'machinic phylum' of hybrid assemblages, collapsing 2.5 millennia of transcendent authority into schizotechnic runaway.

Anti-Oedipus appeared in 1972, and has been subject to two decades of muffled and confused reception under the aegis of 'post-structuralist' presumptions as to the priority and (quasi-)Saussurean determination of the sign, the counter-ideological essence of left political discourse, and the representational organization of the unconscious. It is only recently that such redundant interpretations

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of the *Capitalism and Schizophrenia* apparatus – fuzzily intermeshed assembly kits such as schizoanalysis, diagrammatics and rhizomatics – have begun to calve into pragmatic engagements (including user's guides).

Whilst the two books reviewed here cannot be described as 'hot off the press', they remain uncontested as thoroughgoing responses to the immense challenge posed by the Deleuze-Guattari conjunction, as well as a particular bifurcation within its reception (differentiating it from scholastic history-of-philosophizing by taking it in the direction of complex materialism). English readers of Deleuze and Guattari know Brian Massumi through his generally excellent (though occasionally glitched) translation of *A Thousand Plateaus*, as well as his smattering of consistently thoughtful, passionate and stylistically exuberant writings in a schizoanalytic vein. *A User's Guide to Capitalism and Schizophrenia* is his most sustained engagement with these issues to date; an 'introduction' to schizoanalysis of as yet unparalleled richness (though it is also more than that). Manuel De Landa has the enviable status of a non-academic writer of enormous technical talent and breadth of interest. His *War In the Age of Intelligent Machines* is buoyed by a robust and sophisticated realism unencumbered by old ideas, and brilliantly inflected by new diagrams: it is quite possibly the most theoretically sophisticated concrete history of information technology and self-organizing alloplastic systems currently available in any language.

Postmodernism presupposes a definition and departure from modernism. This is a challenge Massumi embraces, and to which De Landa – despite his disdain for semio-relativist academicizing – also responds affirmatively and in detail. In both cases the collapse of the modernist project is implicitly or explicitly celebrated, on the basis of a sophisticated understanding of its teleological, statist, exclusivist, idealist and paternalistic assumptions, and in both cases the arrival of postmodernity is registered as an explosion of infotech-intermeshed and market-dynamized chaos culture. This is not to suggest that either writer entirely escapes intellectual thralldom to modernity (with its exclusive-reciprocal politico-scientific dyad). Massumi is the more political, 'deconstructive' and even quasi-psychoanalytical (including a long discussion on infantile subject formation), whilst De Landa tends to a more mathematico-scientific mode, which is folded directly into collective history, yet still retains transcendent features. Where Massumi refers to scientific topics he slides into a rhetoric of examples

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disengaged from socioeconomic process, whilst De Landa's para-positivism exhibits a symmetrical residue of segregative thematic specialization. Since the history of thermodynamics is the history of technicizing commerce — of modernizing machines — any account that autonomizes science inevitably moralizes social change (into political theatre), or allows such moralization to persist undisturbed, This is a trap in which both writers are at least partially and occasionally snared.

Materialism is characterized by an horizontal interaction with empirical researches, deploying new syntheses to subvert transcendent epistemology and metapositionality, and thereby attuning itself to the computer-driven experimentalization which is dissolving science and politics into bottom-up cultural engineering processes, with a concommitant thematization of complexity (far-from-equilibrium dynamics), and an initiation of intelligenic war against dirigiste institutions. Modernity is fluidized:

> A liquid sitting still or moving at a slow speed is in a relatively disordered state: its component molecules move aimlessly, bumping into each other at random. But when a certain threshold of speed is reached, a flowing liquid undergoes a process of self-organization: its component molecules begin to move in concert to produce highly intricate patterns. Transition points like these, called 'singularities', where order spontaneously emerges out of chaos, have been the subject of intense scientific analysis over the last three decades. (De Landa, p. 15)

Technocultural chaos flows from feedback mathematics, formulating abstract cybernetic processes as reiterating non-linear equations. Each such formula describes a programme with an open-ended number of steps, whose execution is the shortest path to the exposition of its content (and thus irreducibly experimental). Since chaotic complexity results from massive reiteration it is both tractable to, and dependent upon, machines. It emerges with the computer reformatting of scientific research as simulations programming: exploding unsummarizably in artificial space. The 'source' of unpredictability in chaotic systems is their sensitive dependence upon initial conditions; a concept that technically consolidates the discovery of disproportional divergences from process-trajectories, resulting from the amplification of 'insignificant' differences by positive feedback effects and other non-linearities (stretchings and foldings). At singular points of bifurcation — where such runaway differentiation 'locks in' to an artificial destiny — a process switches 'catastrophically' into a new behavioural regime ('phase'). Such

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sensitivity subverts the purported autonomy of organizational levels and their concomitant scale-specific determinisms. Due to this intrinsic scale-neutrality chaos research pre-emptively evaded confinement within any isolable disciplinary field. Despite a rapidly evident affinity with the overtly turbular processes of fluid dynamics and meteorology, the first usage of chaotic rescaling techniques (by Mandelbrot) was directed at the mathematical analysis of market fluctuations, and this disrespect for metaphysical boundaries between 'social' and 'natural' domains continues to characterize non-linear modelling.

The irreducibility of chaotic processes to algorithmic summary has devastating consequences for politico-scientific modernism, with its attachment to transcendent reason, deterministic planning, representational capture and – above all – the subordination of experiment to theory and law. The continuation of non-linear dynamics into involvements with spontaneously emergent non-classical ('strange' or 'fractal') attractors, dissipative-structures (Prigogine and Stengers), complex adaptive systems (the Santa Fe Institute), and even artificial life (Langton) completes the dissolution of boundaries between extravagantly chaotic phenomena and their instantiation within computer networks; immanentizing intelligence in a way that virtually terminates all command control. 'Besides being the place where the machinic phylum joins humans and machines into a higher level, synergistic whole, the computer screen has become a window into the phylum itself' (De Landa, p. 226).

Irrespective of their idiosyncratic strategies and attachments, De Landa and Massumi consolidate the fusion between Deleuze-Guattari and the anti-science/anti-politics of complexity; carrying philosophy across a fatal threshold of definitive passage to post-modern thought. Their work leaves no room for serious doubt that the vocabulary of *Capitalism and Schizophrenia* massively and rigorously intersects with that of non-linear dynamics, allowing for fluid transferences between self-organizing simulations software and the schizoanalytic scrambling-apparatus of multiplicities, virtual singularities, abstract machines, intensive gradients, rhizomic webs and molecular assemblages.

Massumi tweaks Deleuze and Guattari into affinity with anarchism, and zestfully promotes their anti-Oedipal onslaught on family values, taken as the key to coercive normalization in post-modernity (cynical capital-culture). It would be intriguing to see

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such polemic skidding considerably further into nihilism, but even this restrained version meshes brilliantly with its contextual discussion of multiple-attractor interference and desiring-circuitries, interspliced with acute and humorous social commentary. Towards the end of the book this carefully honed schizocomplexity toolkit is deployed in an exquisitely intelligent discussion of postmodernity, understood in terms of the 'real subsumption' of society by capital (as anticipated in Marx's *Grundrisse* and worked through — far less insightfully — by Negri amongst others).

> The neoconservative transnation-state corresponds to what is called 'postmodernism' on the cultural level, and in political economy 'postindustrial society' or 'late capitalism.' It is characterized by a breakdown of the Keynesian alliance and a renewed war by management against labour, accompanied by a dismantling of the welfare state. (Massumi, p. 128)

Despite evident misgivings, Massumi is courageous enough to proceed to the anti-Oedipal-Marxist conclusion that the maximally accelerated development of productive-force is the infrastructure of revolutionary potential. Realistically confronting the irreversible 'neoconservative' breakdown of inhibitively regulated production arrangements, he argues that '[w]hen capital comes out, it surfaces as a fractal attractor whose operational arena is immediately coextensive with the social field' (Massumi, p. 132), saturating the earth with telecommercial axiomatics that signal the virtual obsolescence of all governmental structures, whether those of the nation-state, of the corporation or of micro-social entities ('the family').

This superb and necessary analysis is marred by a residual personalization of social forces (it is always a question of 'the capitalist' and greed rather than of pension funds on automatic and similar anonymous capital formations), an inane folkish eco-panic (viz. the impending 'death of the planet' [Massumi, p. 137]), and a conclusion that lurches into a ridiculous appeal of the let's-all-hold-hands-and-save-the-world type. 'If this sounds vague, it is . . .' (p. 141). These elements collaborate objectively with reactionary tendencies to the restoration of macropolitical controls (as Massumi is at least partially aware [p. 139]), and stem from his one consistent weakness as a thinker: abject supplication before the idols of PC and knee-jerk 'countercultural' responses. Whilst it would be unrealistic to expect him to concur with the proposition that 98 percent of everything the left has ever said is total garbage (not that the right is any different), his transparent terror of being judged unsound is

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at times pitiful to behold. In discussing feminist critiques of schizo-analysis, for instance, he concedes far too much to crude and unsustainable constructivisms, subordinating not only gender to the effects of dyadic molar segregation, but also effacing entirely the existence of molecular populations of real sexed traits (as if hormones were a patriarchal plot). He thus idealizes Deleuzoguattarian becoming-a-woman – which is in fact being very successfully executed at the level of impersonal matter by infotech, dioxins and oestrogen residues (with no 'consent' [Massumi, p. 89] necessary) – into an issue concerning 'the feminine gender stereotype' (p. 87) and its associated political melodramas.

Similarly, whilst his position is in important respects post-socialist – severing theoretical allegience to the state with admirable raucousness – it still remains fixated upon unidimensional political articulation, defining anarchists as ultra-leftist and at times seeming to implicitly conflate market dynamics (i.e. perpetual revolution) with conservative social order. He exhibits a corresponding taste for dewy-eyed euromantic losers:

> the Situationists in France, the Provos and Kabouters of the Netherlands, the Yippies and their allies in the US . . . the Italian autonomists . . . the convergence of squatters, associated marginals, and extraparliamentary Greens in Northern Europe; and in general, the 'radical' wings of feminist and other minority movements. (Massumi, p. 121)

It is surely not only amongst hard-bitten cynics that one would find a considerably greater deterritorializing force being allotted to the convergence of supernova neo-Chinese economics, bottom-up apolitical feminization, collapse of the nation-state, and exponential take-off by distributed computer systems.

Even though Massumi is intermittently careful to dissociate libidinal polarity (paranoia-schizophrenia) from the left–right ideological spectrum, their confusion ultimately sabotages his diagnosis of the postmodern scene. Rather than insisting upon the perpendicular relation of authoritarianism to the individualism–collectivism co-ordinate system – heterogeneous disordering tendencies confronting left and right civic-order control-freaks – Massumi is sucked back into the dead-end identification of social democracy with lightly schizzed capital horror. To remark that the 'Democratic Party tilts ever so slightly toward the anarchist-schizophrenic pole, the Republican Party toward the fascist-paranoid' (Massumi, p. 122) is to efface the real splits dividing xenophobic corporatists

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from minoritarian activists on the one hand, and foaming family-values theocrats from economic de-regulators on the other. It thus misses the trap involved in a political menu that welds economic freedom to (Republican) cultural authoritarianism, and cultural freedom to (Democratic) statist coercion, thereby systematically frustrating every electoral attempt to junk as much government as possible in both the 'public' (despotic) and 'private' (Oedipal) spheres, and leading to the accelerating decathexis-deterioration of all political institutions, projects and affect structures. Terminal state crisis is not something one is allowed to vote for, but it is happening nevertheless. Schizophrenia has no political representatives, which is exactly why it can't be stopped.

Given his bizarre confidence in 'the political' it is not surprising that Massumi aligns himself with the paranoid Foucauldian category of 'resistance' (p. 106) rather than its Deleuze-Guattari critique, and the tone of his book is in large part umbrated by an almost Frankfurt School sense of monolithic oppression hopelessly contested by rare moments of heroic marginality. De Landa is far closer to the 'cutting edge of deterritorialization', finding its effects registered even in the command kernels of military apparatuses and industrial regimes, as self-organizing matter breaks out of its constriction within anthropomorphic control schemas, carrying power up-river into meltdown.

Amongst other things, *War in the Age of Intelligent Machines* is a study in the limits of power. It explores the messy interaction between 'the command imperative' (De Landa, p. 155) and self-organization, indicating how the former tends to corrode under the pressures of military and economic competition, as top-down institutions are driven to decentralize their processes and re-implement initiative at ever lower levels, if they are not to succumb to the traffic-control breakdowns endemic to authoritarian modes of organization.

> [T]he Vietnam War . . . proved the self-defeating nature of centralization: the more one tries to achieve total certainty, the greater the increase in the information flow needed to run the operation, and therefore the more uncertain the final result. (De Landa, p. 79)

Although military institutions are the primary focus of De Landa's investigation, 'to the extent that centralized command structures have been exported to the civilian world (e.g. the rationalization of

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the division of labour), the critique of centralization reaches beyond the military' (p. 82). He indicates a number of important cross-overs between the two sectors, such as the military origin of industrial standardization, mass-production command management and strategic automation, debunking the productivist legitimations surrounding each, and indicating instead a definite tendency for institutional power to sacrifice efficiency for uniformity whenever competitive conditions are slack enough for it to do so. It is the chaos of war, traffic crises, market pressures and 'turbulent demographic phenomena (e.g. migrations, crusades, invasions)' (p. 14) – rather than endogeneous 'resistances' – that compel power to surrender control downwards and 'nomadize': 'The military is being forced to disperse control in the network management field, just as it was forced by the conoidal bullet to disperse control in the battlefield' (p. 120). Occasional rallying cries notwithstanding, this process of competition-compelled institutional flattening and fluidification is not the result of intentional human action. In a play on the primary Deleuzoguattarian icon for synergism – the wasp and orchid captured by a coevolutionary spiral – he floats the image of a nonhuman descendant of the machinic phylum studying its past:

> The robot historian . . . would hardly be bothered by the fact that it was a human who put the first motor together: for the role of humans would be seen as little more than that of industrious insects pollinating an independent species of machine-flowers that simply did not possess its own reproductive organs during a segment of its evolution. (p. 3)

It is crucial to De Landa's anti-humanism that social assemblages are immanent to nature, differentiated by scale rather than essence, so that the history of war is only incidentally concerned with the accomplishment or failure of policy. Far more basic – and consequential – is the emergence of machines: the arrival of singularities expressed in matter-energy flux as innovative dynamics or dissipative structures.

> From the point of view of the machinic phylum, we are simply a very complex dynamical system. And like any other physical ensemble of fluxes, we can reach critical points (singularities, bifurcations) where new forms of order may spontaneously emerge. (p. 124)

De Landa replaces theohumanist technological dipolarity (plan-

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ning/instruments) with a materialist model attentive to machinic scaling, delineating in turn the four principal levels of weaponry, tactics, strategy and logistics, and the processes of self-organization at work within each: 'eddies and vortices nested inside more eddies and vortices' (p. 8). As with simpler examples of turbulence – such as the elementary dissipative-structures discovered by fluid dynamics – 'the machines produced as the output of each level (weapons, battles, wars, etc.) may be seen as the units of assembly for the next level up the scale' (p. 23). All such systems implement the same abstract machine, whose function is to export entropy (heat, noise, friction) by transmitting it down to low-level distributed components, rather than allowing it to accumulate as either ambient or concentrated disorder. It is thus that an effective military formation is able to persist as 'an island of order in the midst of turmoil' (p. 61), dissipating the 'heat' generated by dirty data, foraging requirements, and enemy action by way of sustained initiative 'spontaneously' emergent from dispersed sub-units.

In a multifaceted and consistently insightful study of concrete historical material, De Landa produces a number of important research reorientations, especially in respect to the understanding of Clausewitz, the Napoleonic war machine, the genesis of the factory system and production management criteria, and the vital question of 'the connection between information-processing technology and self-organizing processes' (p. 132). A recurrent issue is the obsessional military drive to take humans 'out of the loop' in order to shorten command lines and ensure determinable behaviour; a will to sedentary power that is almost defining for modern social forms. He also delineates a chronic tension within nineteenth- and twentieth-century military thought between Clauswitzeans and Jominians, with the former emphasizing friction, politico-military interaction, and sensitivity to empirical conditions, the latter oriented to idealization, military autonomy and rigid planning. By prolonging these tendencies into theoretical and institutional conflicts within Pentagon think-tanks De Landa very effectively draws out their crucial contemporary stakes.

The downside is not very far down. There is a certain amount of unnecessary repetition, but this invariably concerns points that bear underlining. In addition, for a work published in 1991 *War in the Age of Intelligent Machines* is strangely enthralled by Cold War obsessions ('head-to-head' virtual thermonuclear confrontation). It is also peculiar that – given his concerted and devastating-

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onslaught on authoritarian myths about the efficiency of centralized command structures – De Landa should concur with paranoid fantasies about the virility of MITI-bureaucratized Japanese capitalism, ignoring Japan's real advantages (relatively tight government budget discipline and a high domestic savings rate) to focus on the top-down cul-de-sac of 'fifth generation' computing (which is likely to go the way of analog HDTV and waste a very large amount of money).

Both these books are vigorously intelligent, unusually honest and innovative works in comparison to which the more familiar debates of contemporary philosophy seem depressingly sterile, dated and parochial. Both have contributed to the reinforcement of an intellectual convergence that will entirely recast vast swathes of theoretical endeavour, whilst anticipating theory's replacement by something else. Of course, this 'something else' is already happening: in their different ways De Landa and Massumi affirmitively register a new experimentalism in accelerating collision with crumbling sedimentations of traditional authority.

One thing is realistically incontrovertible: we haven't seen anything yet.

Nick Land teaches Philosophy at Warwick University. His publications include *The Thirst for Annihilation* (London: Routledge, 1992).

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